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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,068	02/25/2004	Denis Babin	MMID 2988	8946

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MOLD-MASTERS LIMITED  
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GEORGETOWN, ON L7G-4X5  
CANADA

EXAMINER
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HEITBRINK, JILL LYNNE

ART UNIT	PAPER NUMBER
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1732

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/785,068

Applicant(s)

BABIN, DENIS

Examiner

Jill L. Heitbrink

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/04, 12/05, 3/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by either Doyle et al. Publication No. 2003/0012845 or Moss et al. Publication No. 2002/0121713.

3. Doyle discloses injection molding (see Fig. 13) including a manifold (231) having a plurality of manifold melt channels for conveying a melt stream; a plurality of nozzles (215), wherein each nozzle has a nozzle melt channel (213) fluidly connected at a first end to a respective manifold melt channel (208) and at a second end to a mold gate (211) of a separate mold cavity, the nozzle further including an actuated valve pin (200) slidably positionable within the nozzle melt channel having a head portion (227) for opening and closing the mold gate, wherein the valve pin has a flow control surface (205) upstream of the head portion thereof that is slidably positionable for controlling the flow rate of the melt stream through the nozzle melt channel towards the mold gate (the head controls the rate of flow of the melt material to the respective gates, paragraph [0059] which inherently controls the flow rate of the melt stream through the nozzle

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channel towards the mold gate). Each mold cavity being of substantially equal volume is disclosed in paragraph [0065]. The mold cavity being of different volumes is disclosed in paragraph [0066]. Moss discloses a similar injection molding apparatus to Doyle.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle et al. Publication No. 2003/0012845 taken together with either Gellert Pat. No. 5,106,291 or Erik et al. Pat. No. 3,716,318.

6. Doyle discloses an injection molding system essentially as claimed except the valve pin flow control surface (205) is located within the manifold so as to control the flow rate of the melt through the nozzle towards the gate. Doyle teaches that other types of nozzle maybe used, paragraph [0085], and also, teaches the flow control surface being used in combination with the nozzle surface in Figs. 6 and 7. In Doyle the valve pin actuator is attached above the manifold. Both Gellert and Erik teaches a nozzle with a valve pin and valve pin actuator attached to the nozzle wherein the valve pin passes through the nozzle channel to the gate, without passing through the manifold channel. It would have been obvious to a person of ordinary skill in the art of injection

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molding that to use a nozzle and manifold attachment of Gellert or Erik in combination with the operation of the flow control surface of Doyle since the channel provided about the valve pin has a similar shape and purpose for passing the melt to the gate. Doyle discloses the position of the valve pin flow control surface in the melt channel being determined based on processing information received from at least one processing sensor, i.e. pressure sensor in the nozzle melt channel, see embodiment of Fig. 6 and 31, or pressure sensor in the mold cavity Fig. 34. Doyle discloses the plurality of nozzles being hot runner nozzles operating at a first temperature, see paragraph [0058]. Doyle discloses "the controller may be responsive to any condition related to the rate at which material flows (such as material pressure, valve pin load, valve pin position, material temperature, flow rate as measured by a flow meter, etc.)" in paragraph [0209], also see paragraph [0063]. It would have been obvious to a person of ordinary skill in the art that the controller being responsive to the material temperature or pressure and the position of the valve pin which effects the rate of material flow through the nozzle to obtain the desired properties of the melt flowing to the cavity.

7. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moss et al. Publication No. 2002/0121713 taken together with either Gellert Pat. No. 5,106,291 or Erik et al. Pat. No. 3,716,318.

8. Moss discloses an injection molding system essentially as claimed except the valve pin flow control surface (1352) is located within the manifold so as to control the flow rate of the melt through the nozzle towards the gate. Moss teaches the flow control for the nozzle, paragraphs [0005] and [0006], and also, teaches the flow control surface

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being used in combination with the nozzle surface in Figs. 6 and 7. In Moss the valve pin actuator is attached above the manifold. Both Gellert and Erik teaches a nozzle with a valve pin and valve pin actuator attached to the nozzle wherein the valve pin passes through the nozzle channel to the gate, without passing through the manifold channel. It would have been obvious to a person of ordinary skill in the art of injection molding that to use a nozzle and manifold attachment of Gellert or Erik in combination with the operation of the flow control surface of Moss since the channel provided about the valve pin has a similar shape and purpose for passing the melt to the gate. Moss discloses the use of sensors to control the flow rate of the material including pressure sensors and temperature sensors, see paragraphs [0150]-[0152], a group of sensors including pressure, temperature, flow and position in paragraph [0021] and the combination of pressure and position sensors with the algorithms in paragraph [0096]. The flow rate of the melt through the respective nozzle melt channel being reduced when the temperature of the hot runner nozzle is reduced below the desired temperature and the flow rate of melt through the respective nozzle melt channel being increased when the temperature of the hot runner nozzle is increased above the first temperature would have been obvious to a person of ordinary skill in the art when using the control algorithms of Moss since the relationship of the melts temperature to its viscosity and Moss adjusting the flow rate based on the sensed temperature would require such movement.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 61-63428 discloses a similar injection molding system to

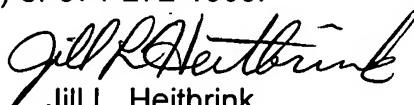
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Doyle and Moss wherein the valve pin is mounted in the runner system to control the flow rate to the molds by sensing pressure. The runner system adjacent the gate would have been similar to a nozzle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill L. Heitbrink whose telephone number is (571) 272-1199. The examiner can normally be reached on Monday-Friday 9 am -2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jill L. Heitbrink  
Primary Examiner  
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jlh